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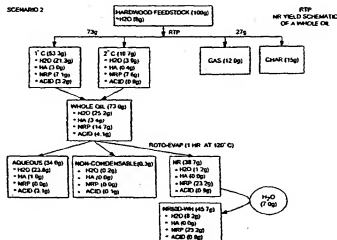
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(54) Title: NOVEL NATURAL RESIN FORMULATIONS



(57) Abstract: This invention is directed to a method of preparing a natural resin by liquefying wood, bark, forest residues, wood industry residues, or other biomass using rapid destructive distillation (fast pyrolysis). Fast pyrolysis produces both vapours and char from biomass, and following removal of the char from the product vapours, a liquid pitch product is recovered and processed by distillation, evaporation, or a combination thereof, in order to obtain a natural resin which may be in either liquid or solid form. The natural resin comprises a total phenolic content from about 30 % to about 80 % (w/w), and is a highly-reactive ligninic compound that has been found to be suitable for use within resin formulations without requiring any further extraction or fractionation procedures. Resins comprising up to 60 % natural resin have been prepared and tested in board production and found to exhibit similar properties associated with commercially available resins. The natural resin may substitute for phenol, or for both phenol and formaldehyde within phenol-containing resins. Similarly, the natural resin can replace a substantial part of the components within urea-containing resins.

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